

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

MEMO TO: Timothy J. Dwyer, Technical Director
FROM: Timothy Hunt and Rory Rauch, Pantex Site Representatives
DATE: 10 April 2009
SUBJECT: Pantex Plant Weekly Report

Conventional High Explosive (CHE) Separation: A recent phenomenon has developed during CHE separation on a specific dismantlement program. Three times in the past two months, separation of the main charges has not occurred cleanly; i.e., a non-residual amount of CHE cracked off one charge and adhered to the other instead of separating where expected. Documentation from the design agency states that the responses are the same for normal and damaged CHE. The procedure will be revised to address recovery actions for this contingency.

While applying pressure to pump apart the CHE main charges on a different program, one of the hemispheres was noted to have significant cracking just above the fixture. The pump pressure applied by the technicians never exceeded about ten percent of the force allowed by the procedure. To achieve a safe and stable configuration, residual pressure was relieved and the pump removed. Operations are suspended and short-term plans include removing the fixture so the condition of the unexposed portion of the CHE can be assessed.

Safety System Performance Degradation: Last weekend, B&W Pantex shut down power to 12-104A to perform scheduled electrical maintenance. The appropriate limiting conditions of operation (LCOs) were entered. On Monday, following restoration of power, it was discovered that the building blast door interlocks (BDIs) were inoperable. The BDIs were expected to return to operability after power was restored; therefore, exit from the LCOs was not tied to the verification of BDI operability. By chance, the work package from the electrical shutdown had not been completed and the LCO remained in effect when the BDI inoperability was discovered. B&W Pantex subsequently declared a performance degradation of the BDIs for affected bays.

Initial indications are the inoperability was caused by memory loss to the BDI programmable logic controllers (PLCs) after power was cut. Each PLC has a battery backup, but the batteries were expended because the need to maintain them had not been incorporated into the 12-104A maintenance procedures. The BDIs remain inoperable. An extent of condition review indicated that maintenance of the batteries in other facilities had been flowed into their respective procedures; however, as a result of this event, the battery replacement periodicity may be changed from five years to one year. Also, due to a miscommunication between facility management, the LCO was inappropriately exited during a graveyard shift. Facility access was restricted until the LCO was re-entered the following morning.

Pit Requalification Activities: This week, two process anomalies occurred in the pit requalification facility. In the first case, a higher than expected internal pressure was found in a pit under test. The hole allowing access to the internal volume was immediately rewelded and the unexpected condition is being evaluated. During the second event, part of a measuring machine probe contacted the pit tube while performing a full pit scan. The machine automatically halted upon sensing the inappropriate contact. In both cases, the equipment performed as designed.

Tooling Malfunction: While installing a lifting fixture on a unit in a special purpose facility, a popping sound was heard. A fastener was being torqued and at a value of about 20 percent less than procedurally allowed, a washer broke. The tool was disconnected from the strongback/hoist and the situation is being evaluated. There was never any threat of losing control of the unit.

PXSO Facility Representatives (FRs): The FR organization is now fully staffed at ten—per the 2004 staffing analysis—with the arrival of an experienced FR from the Nevada Site Office.